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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/044,276	01/10/2002	William K. Leonard	55476US004	9220
32692	7590	03/18/2004		
3M INNOVATIVE PROPERTIES COMPANY PO BOX 33427 ST. PAUL, MN 55133-3427			EXAMINER FLETCHER III, WILLIAM P	
			ART UNIT 1762	PAPER NUMBER

DATE MAILED: 03/18/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/044,276	LEONARD ET AL.	
	Examiner	Art Unit	
	William P. Fletcher III	1762	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 10 January 2002.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-44 is/are pending in the application.
- 4a) Of the above claim(s) 1-19 is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 20-44 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 10 January 2002 is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ . |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>7 sheets total</u> . | 6) <input type="checkbox"/> Other: _____ . |

DETAILED ACTION

Election/Restrictions

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:

- I. Claims 1-9, drawn to a device, classified in class 118, subclass 110.
- II. Claims 20-44, drawn to a method, classified in class 427, subclass 359.

The inventions are distinct, each from the other because of the following reasons:

2. Inventions I and II are related as process and apparatus for its practice. The inventions are distinct if it can be shown that either: (1) the process as claimed can be practiced by another materially different apparatus or by hand, or (2) the apparatus as claimed can be used to practice another and materially different process. (MPEP § 806.05(e)). In this case, the apparatus as claimed can be used to practice another and materially different process: smoothing or calendaring paper or another uncoated, cellulosic web.
3. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.
4. During a telephone conversation with David R. Cleveland (Reg. No. 29,524) on 2/20/2004, a provisional election was made *without* traverse to prosecute the invention of II, claims 20-44. Affirmation of this election must be made by applicant in replying to this Office action. Claims 1-19 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

5. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Specification

6. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

The following title is suggested: METHOD OF COATING A SUBSTRATE UTILIZING ROTATING SUPPORT AND AT LEAST ONE PICK-AND-PLACE ROLL.

Drawings

7. The drawings are objected to because Figs. 4-13 are not dark and well-defined as to show sufficient contrast. Applicant should submit new drawings that may be clearly and faithfully reproduced in any patent or publication issuing from this application. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Objections

8. Claims 42-44 are objected to because of the following informalities: these claims refer to certain regions of Figs. 4, 11, and 12, respectively. Reference to figures in such a way is not proper U.S. practice. Appropriate correction is required.

Claim Rejections - 35 USC § 112

9. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

10. **Claims 26 and 42-44 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.**

With respect to claim 26, this claim recites "...wherein the surface speed differential can be varied...". It is unclear whether the speed is or is not, in fact, varied.

With respect to claims 42-44, these claims recite "...are within a white region depicted in Fig...". This phrase renders the claims indefinite. The resolution of the referenced figure is insufficient to determine the exact boundary of the claimed "white region." In other words, it is impossible to tell, just by looking at the figure, in the regions of transition from white to gray, which coordinates would be considered "white" and which "gray." From the top of page 15 of the spec., it appears that a mathematical formula was used to derive the plots in the referenced figures. The examiner suggests that claims reciting such mathematical formula(e) would be less indefinite.

Claim Rejections - 35 USC § 103

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any

evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

13. Claims 20-25 and 27-44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Reade et al. (US 4,102,301 A) in view of Swindells (GB 1 293 045).

With respect to claim 20, Reade teaches a method comprising applying a liquid coating material to a substrate and repeatedly contacting the coating material with at least one, contra-rotating roller (2:7-22; 3:11-16; and 3:45-4:61). The material is transferred around the periphery of the roller and deposited on the substrate on the downstream side of the roller, thereby forming a uniform coating of the material (2:7-22). From this description, it is the examiner's position that the contra-rotating roller of Reade reads on applicant's claimed "pick-and-place roll."

Reade does not teach that the substrate is nipped between a support and the roller or that the substrate and the roller are rotated.

Swindells teaches a method of forming a coating on a moving substrate, the simplest embodiment of which comprises nipping the coated substrate between a support (backing roller) and a contra-rotating smoothing roller (1:21-35). From the description and Figure, it is clear that Swindells' backing roller serves not only to rotate and drive the substrate, but also to urge it into contact with the smoothing roller (1:53-58 and 1:76-2:23).

It would have been obvious to one of ordinary skill in the art to modify the method of Reade so as to incorporate a rotating backing roller to drive the substrate and urge it (i.e., nip it) against the contra-rotating roller, as suggested by Swindells. One of ordinary skill in the art

would have been motivated to do so by the desire and expectation of successfully driving the substrate and ensuring contact between the substrate and the contra-rotating roller.

The examiner recognizes that the contra-rotating roller of Swindells utilizes a doctor blade to remove excess coating material and so does not function as a pick-and-place device. However, if the doctor blade were not present, the contra-rotating roller of Swindells would function analogously to that of Reade. Consequently, one of ordinary skill in the art would have had a reasonable expectation of successfully modifying the method of Reade in the fashion described by the examiner above.

Lastly, and also with respect to claims 25 and 27, Reade teaches that the speed of rotation of the contra-rotating roller is not the same as the speed of the substrate (and, by extension from the cited combination of references, the backing roller). It is well-known that for rollers of the same circumference, different rotational speeds result in different periods of rotation. Consequently, it is the examiner's position that the combined teaching of Reade in view of Swindells is inclusive of the backing and contra-rotating rollers having different periods of rotation.

With respect to claim 21, Reade teaches "at least one [contra-rotating roller]" (3:11-17) which is inclusive of the claimed "at least two pick-and-place rolls."

With respect to claim 22, Reade teaches that, where two contra-rotating rollers are utilized in succession, their peripheral speeds are not equal (4:1-20). By the same reasoning as above, it is the examiner's position that this teaching is inclusive of different periods of rotation.

With respect to claims 23, 24, and 28, Reade teaches that the speed (and, by extension, the period) of contra-rotation of the rollers can be varied during the method to maintain uniformity of the coating material (2:23-32).

With respect to claim 29, Swindells teaches that the thickness of the coating passing between the backing and contra-rotating smoothing rollers is determined by the gap between the two rollers and that this gap is adjustable (2:1-23). In the combination of Reade in view of Swindells, this gap determines how much coating material is picked-up by the contra-rotating roller and later placed-down, thereby effecting the uniformity of the coating. Consequently, it would have been obvious, in view of the teaching of Swindells to control the uniformity of the coating in the combination of Reade in view of Swindells by adjusting the gap between the backing and contra-rotating rollers.

With respect to claims 30 and 42-44, applicant has defined "dimensionless roll size" as the ratio of the actual contacting roll circumference to the actual roll circumference (see p. 9 of the spec.). Such parameters are both physical properties of the rollers, readily controlled by the artisan in selecting the appropriate roller, as well as result-effective variables effecting the speed of treatment and the uniformity of the treated coating. Absent a showing of unexpected results demonstrating the criticality of the claimed values of these result-effective variables, it would have been obvious to one of ordinary skill in the art to modify the method of Reade in view of Swindells so as to optimize these result-effective variables by routine experimentation.

With respect to claims 31 and 32, Reade teaches applying a discontinuous coating in a pattern of stripes (2:43-3:10 and Fig. 1).

With respect to claims 33, 34, and 42, "dimensionless stripe width" is also the ratio of result-effective variables, readily controlled by the artisan and effecting the amount of treatment required to yield a uniform coating. Absent a showing of unexpected results demonstrating the criticality of the claimed values of these result-effective variables, it would have been obvious to one of ordinary skill in the art to modify the method of Reade in view of Swindells so as to optimize these result-effective variables by routine experimentation.

With respect to claims 35 and 36, it is the examiner's position that spraying is a well-known and readily-apparent means of applying a coating material to a substrate.

With respect to claim 37, insofar as elimination of the voids initially present between the stripes reads on conversion to a "continuous, void-free coating," Reade in view of Swindells reads on this claim.

With respect to claim 38, "dimensionless minimum caliper" is also the ratio of result-effective variables, readily controlled by the artisan and effecting final thickness of the coating. Absent a showing of unexpected results demonstrating the criticality of the claimed values of these result-effective variables, it would have been obvious to one of ordinary skill in the art to modify the method of Reade in view of Swindells so as to optimize these result-effective variables by routine experimentation.

With respect to claims 39-41, while Reade teaches that the final coating thickness is about 2.5-3.8 microns, it is clear from the teaching of Swindells, mentioned above, that the final coating thickness may be controlled by the gap between the backing and contra-rotating rollers.

Allowable Subject Matter

14. Claim 26 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

15. The following is a statement of reasons for the indication of allowable subject matter: the prior art neither teaches nor reasonably suggests the method of claim 25 in which the speed differential is varied sinusoidally.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to William P. Fletcher III whose telephone number is (571) 272-1419. The examiner can normally be reached on Monday through Friday, 9 AM to 5 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Shrive P. Beck can be reached on (571) 272-1415. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

WPF 3/12/2014
William P. Fletcher III
Examiner
Art Unit 1762

Bd
BRET CHEN
PRIMARY EXAMINER